

The Harm in Kratom

We noted the most interesting blog by Don Dizon [1] regarding the potential pulmonary toxicity induced by one (or a combination of several) of the fifteen herbal supplements taken by his patient. To illustrate the real and serious toxicity of such supplements, which are commonly available and unregulated by federal agencies, we present a case of severe hepatic toxicity associated with *kratom*, a plant derivative of increasing use as an alternative psychostimulant. A 23-year-old male presented to the emergency department with 4 days of painless jaundice, light stools, and dark urine, 1 week after last consuming *kratom*, a legally available psychoactive extract from the *Mitragyna speciosa* plant. He began ingesting a powdered form of *kratom* 6 weeks prior, consuming an estimated 85 grams in total. He denied exposure to toxins or medications, other than moderate alcohol and marijuana consumption. Total bilirubin was 7.4 mg/dL, direct bilirubin 5.8 mg/dL, ALKP 225 U/L, ALT 210 U/L, and AST 129 U/L. His INR was 0.9 and albumin 4.6 g/dL. White blood cell count was 5.6 K/uL, with 8% eosinophils. Serologies and viral molecular tests for infectious and autoimmune hepatitis were negative. Liver biopsy was entirely consistent with cholestatic liver injury. His recovery over a 2-week period was uneventful, with a return to normal liver function.

Mitragyna speciosa is a tree indigenous to Southeast Asia. Traditionally, its leaves have been chewed, smoked, or strained into tea for increased energy or medicinal purposes. *Kratom* contains the alkaloids mitragynine and 7-hydroxymitragynine, which, in addition to having broad neurochemical activity, are known opioid agonists, perhaps explaining why *kratom* has been used in the community to mitigate symptoms of opioid withdrawal. Effects are dose-dependent: small doses produce stimulatory effects, and larger doses produce sedation [2].

Reports of *kratom*'s adverse effects in Asia focus on dependence and withdrawal. More alarming toxicities have been revealed in the Western literature, perhaps as the result of product adulteration or under-reporting of side effects in Asia. These toxicities include hypertension, nephrotoxicity, seizures, and death from presumed overdose [2]. There have been two prior reports of cholestatic jaundice, in cases occurring within 2 and 8 weeks of onset of drug ingestion [3, 4].

In Thailand, a 2007 survey reported lifetime use prevalence of 2.32%, but similar data are not available from other countries [5]. In the U.S., *kratom* may be purchased on the Internet, in "head shops," or in convenience stores. Federal data suggest rising use in the U.S., with increasing numbers of reports (one report in 2010, 81 reports in the first 6 months of 2012) from forensic laboratories involving *kratom* detection in human subjects [6].

A better understanding of the potential toxicities of *kratom* will enable physicians to identify this entity as a causative agent of unusual side effects and to warn patients of risks associated with its ingestion.



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Disclosures

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Editor's Note: See the related article, "What's the Harm?" by Don S. Dizon, on pages 1006-1007 of this issue.

For Further Reading:

Esther L. Davis, Byeongsang Oh, Phyllis N. Butow et al. Cancer Patient Disclosure and Patient-Doctor Communication of Complementary and Alternative Medicine Use: A Systematic Review. *The Oncologist* 2012;17:1475–1481.

Abstract:

Objective. To explore the nondisclosure of complementary and alternative medicine (CAM) use among cancer patients, including reasons for and outcomes from nondisclosure of CAM use, within the context of patient-doctor communication.

Method. A systematic review was conducted exploring investigations surrounding the communication of CAM use for patients with cancer published until August 2011.

Results. A total of 21 studies were located, which reported a prevalence of CAM use among patients with cancer ranging between 11% and 95%; of these patients, 20% to 77% did not disclose their CAM use. The main reasons for nondisclosure were the doctor's lack of inquiry; patient's anticipation of the doctor's disapproval, disinterest, or inability to help; and patient's perception that disclosure of CAM use is irrelevant to their conventional care. There is some evidence to suggest that patient-doctor communication about the use of CAM was associated with an enhanced patient-doctor relationship and higher patient satisfaction.

Conclusion. Although the use of CAM by patients with cancer is high, patients frequently fail to disclose its use to their health professionals for reasons emanating from both sides of the dyadic patient-doctor relationship. Because a substantial proportion of patients with cancer may use CAM and there is potential for herb- or vitamin-drug interactions, further research in patient-doctor communication about CAM is necessary to maintain patient safety and wellbeing. The development of effective interventions to improve the disclosure of CAM use should be an integral part of this future research.